Exploring Bridges

Make bridges out of different materials and see how much they can hold!

Kit contains:

- 1 piece of parchment paper
- 1 piece of copy paper
- 1 piece of cardstock
- data chart

You will need:

- Two objects of the same height to hold the bridges (cans, blocks, etc.)
- Things to use as weights (coins, washers, bolts, rocks, marbles, etc.)

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INSTRUCTIONS

This is a project where you will be testing a lot of your ideas instead of following exact instructions.

(1) Set up two support objects that are the exact same height (two cans, two block towers, etc.).

(2) Choose a bridge material. Fold up the edges and lay the material across the two objects.

(3) Slowly add weights (rocks, coins, marbles, etc.) to see how much your bridge can hold.

(4) As you experiment, you can fill in the chart to keep track of what material works best.

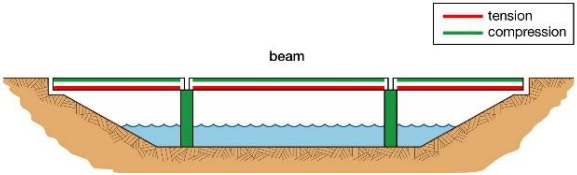
	Paper	Cardstock
Marbles	20	25
Coins		

THINGS TO TRY

- Move the support objects closer together or farther apart. Does that change how much the bridge can hold?
- Put the weights in different spots on the bridge. Does that change anything?
- Try making bridges out of different materials you have at home (aluminum foil, cardboard, etc.).

ALL ABOUT BRIDGES!

There are many different types of bridges. You made a **beam bridge**, which is one of the simplest types of bridges. It consists of two supports on each end and a horizontal bean across. Beam bridges can't be very long unless there are additional supports in the middle, because the supports can't hold much if they're very far apart.



Some other types of bridges include:

- **Truss Bridges**, which are structures made of load-bearing triangles.
- **Arch Bridges**, which use a curved arch structure to support their load.
- **Suspension Bridges**, which are supported by cables connected to towers. These are the longest type of bridge.

LEARN MORE ABOUT BRIDGES

- https://pbs.org/wgbh/buildingbig/bridge/basics.html
- *Bridges: Engineering Masterpieces* by Dan Zettwoch
- *Cross a Bridge* by Ryan Hunter
- *This Bridge Will Not Be Gray* by Dave Eggers